Sports Testing of Entry Level Athletes in American Football

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INTRODUCTION

Over the past several years American style football has become a very popular participation, as well as spectator sport, throughout Japan. Although this sport was first introduced into Japan in 1927, by Dr. Paul Rush, a missionary, who had come to Japan to assist with the building of the YMCA in Yokohama.[7] The present interest has brought some of the best professional team exhibitions and NCAA sanctioned games to Japan, to the delight of both fans and the local players. At the same time there has been a heightened pursuit to improve the caliber of many university teams, as well as the creation of new teams on campuses and in various companies throughout the country.

The interest in achieving a higher quality of play, has created an atmosphere of frantic shopping for the best athlete at the high school level and this will probably extend even lower to the junior high school level in the coming years. How to determine the most physically capable athlete is a question each athletic director and coach has often asked of himself. The physical capacity of both males and females have long been recorded in Japan to learn something of their physical capabilities for endurance. And individual selective test have been instituted, as a qualifying criteria for those who desire to enter the sports arena. However, many of the areas tested continue to reflect the endurance factor, and do not take into consideration the true aspect of the sport to which the athlete will be participating.

DISCUSSION

In this paper I will introduce a series of test for American style football. Unlike many popular sports, football is not an endurance sport. It is a contact sport. American style football requires the participant to wear protective pads and a helmet to avoid serious handicapping injuries.[1] Therefore, the aspiring athlete must possess, first and foremost, a injury free musculoskeletal system prior to entry into this sport. Any serious prior skeletal injury in the cranial, clavicle, spinal, pelvic or patella regions would almost certainly preclude the athlete's participation in this sport. Futhermore, the use of corrective lens, and dentures, would also be prohibitive due to the nature of the body contact consistent in this sport.

A complete physical examination prior to the beginning of any sports activity has long been a mandatory part of any sports program in all Scandinavian, Germany and North America countries. All participates are required to obtain prior medical clearance, from a qualified sports medicine physician at all levels of sports which require continual exertion. This screening may either be performed in mass or by a private physician on an individual basis. The physician should be as concerned with promoting participation athletes with chronic medical conditions as with disqualifying others because of illness or injury.[3] In some cases, such as diabetes, the continuation of some sports activity is highly recommended.[1]

The timing of the screening examination is an important factor. The current trend is toward physical examinations for autumn events to be performed in the spring, so the athlete who needs rehabilitation for a fall season can spend the summer obtaining such rehabilitation as necessary.[3]

Table 1 shows a brief outline of sports categories and the level of competition to which they would be classified.[3]

Sample Classification of Sports on the Basis of Physical Demands

Collision / Contact Sports		
Baseball	Ice Hockey	Soccer
Basketball	Lacrosse	Softball
Boxing	Martial Arts	Volleyball
Field Hockey	Rugby	Wrestling
Football		

Endurance Sports		
Badminton	Rowing	Tennis
Cross Country	Skiing	Track and field
Fencing	Swimming	Water polo
Gymnastics	Table tennis	

Leisure Sports		
Archery	Golf	Sailing
Bowling	Marksmanship	

Table 1

In addition to the general physical condition of the athlete, the football testing program will include testing for skeletal motion, and balance, physical strength, coordination and agility, flexibility, speed and endurance under simulated game conditions for each applicant. All of these factors as well as the mental and intellectual level of the athlete are of prime concern for participation in this sport.

PHYSICAL TESTING

The general characteristics of the applicants' physique, standing and sitting height, normal relaxed chest girth, weight, visual acuity, blood pressure, should be recorded at the start of the testing period.[6]

The data acquired through physique measurements, is used to acquaint the testing facility with the applicants' body size and potential capability and to establish a basis for comparison between applicants. These test are conducted to detect any abnormality in body growth, which may preclude full participation of the athlete. Although the presences of an abnormality would have to be evaluated on a case by case basis, with regard to the position the athlete intends to play.

A standard, non-aided visual acuity test is conducted at a distance of five meters, single ocular measurements only are recorded. The applicant is also questioned concerning the use of corrective lens. This information is also recorded. An electronically controlled sphygmomanometer provides automatic systolic and diastolic print out for the blood pressure during the time of the initial test. (The systolic blood pressure in young person is usually 120 mm Hg and the diastolic pressure is 70 mm Hg.) This is not a substitute for an electrocardiogram (ECG) or the physician's trained ear to detect any miocardia disorder. However, a blood pressure reading is a preliminary for the detection of hypertension, a disease which has come to be associated with the life style of modern society. Excessive salt intake (sodium chloride) is thought to be associated with the development of hypertension.[5] Congenital abnormalities of the aorta (e.g. coarctation of the aorta) can produce hypertension that is subject to surgical correction, as is partial blockage of one of the renal arteries.

Raised blood pressure in an athlete is not in itself a decisive indicator and the athlete should be referred to a physician for additional investigative test.

The following in Table 2 are guidelines for evaluating blood pressure when the athlete is at rest.[3]

Age	Mild Hypertension	Significant Hypertension
under 15	130/80	140/90
15-20	135/85	145/90
over 20	140/90	150/95

Table 2

The next stage of the test proceeds to a measure and record vertical jumping ability from the standing position, supine extension, leg strength, shoulder strength, forearm strength, lung capacity, standing trunk flexion, and heart beat after a timed period of induced strenuous exercise. When feasible, a physician should be available to listen to the heart for pericarditis. Pericarditis is the inflammation of the membranes surrounding the heart, sometimes caused by the after effects of rheumatic fever, a prevalent childhood disorder, often a direct result of untreated tonsillitis. Although pericarditis would not be a serious factor under normal conditions, the exertion caused by participation in a contact sport would be a major disqualifying factor.[4]

The subject of flexibility has produced a great deal of controversy in recent years. There is no doubt, however, that some athletes are "tight" while others are "loose."[2] Assessments of an athlete's flexibility can be tested either by mechanical devices or by having the athlete perform a series of bending and flexing movements.

Some authorities feel that a tight-jointed individual is more prone to muscle strains, whereas a loose-jointed individual is more subject to ligament sprains. However, others disagree with this assessment and feel that one cannot predict the occurrence of injuries based on these criteria alone.[2] Therefore, the data acquired from any flexibility measurements should not become a deciding criteria.

The implementation of various football related drills on the practice field will complete the final phase of the testing series. While conducting drills on the practice field, all safety precautions, with regard to protective equipment must be observed. Futhermore, no direct body contact drills are permitted. The drills are for the observation of skill levels only.

Additionally, each applicant is under constant observation, as to the motivation of the applicant, as well as his acclimation to his peers and surroundings. Entry into an unfamiliar environment is an excellent opportunity to judge individual personalities, as to their adaptability to team sports. A short personnel interview is conducted with each applicant, to gain a better insight into the individual personality of the athlete, his background and experience in the sport.

CONCLUSION

The foregoing testing series is performed for aspiring senior high school student who desire to enter university level American style football. The tests are conducted as much as five months prior to actually receiving the student into the program. Therefore, it is necessary to perform the most comprehensive series of tests. The emphasis on the tests is the potential ability of the athlete based on his present performance. There are no guarantees. Any injury during the interim could alter all of the data for an individual athlete. However, due to the atmosphere of frantic shopping for the best senior high school students, it is not prudent to delay the selection until a later date.

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